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EXAMINER

SCHWARTZ, CHRISTOPHER P

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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3683

DATE MAILED: 05/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/749,235

Applicant(s)

LEE, JONG-CHAN

Examiner

Christopher P. Schwartz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6-9, 11-13 and 15 is/are rejected.
- 7) ☒ Claim(s) 2-5 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-104)
- 6) ☐ Other: _____

Christopher P. Schwartz
CHRISTOPHER P. SCHWARTZ
PRIMARY EXAMINER

DETAILED ACTION

1. Applicants response filed 3/9/05 has been received and considered. Claims 1-13,15 are pending. Claims 14,16 have been canceled.

Information Disclosure Statement

2. The information disclosure statement filed 3/9/05 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance of the foreign documents, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "insulating body" claimed in claim 6 and the limitations of claim 9 claiming the different sets of linear parts must be shown or the feature(s) canceled from the claim(s). Applicant should also point out where the limitations of claims 10 and 11 are found in the drawings.. **No new matter should be entered.**

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure

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is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 1 objected to because of the following informalities: Claim 1 line 5 "said discs" should be "said disc". Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2,6,9,11 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 2 line 3 it appears the phrase "...at both prongs" should be "in" or "on" both prongs" since "at" seems to indicate they're floating in space, contrary to what is shown in the drawings and described in the specification.

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Regarding claim 6 although described on page 3 in paragraph 0014 it is unclear what element applicants consider the insulating body to be since it has not been shown in the drawings. No new matter should be entered.

Claims 9 and 11 line 1 the phrase "in case.." renders the claim confusing. What if the linear part and/or heat generating parts are not plurally formed?

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1,6-9,11-13,15 rejected under 35 U.S.C. 103(a) as being unpatentable over Korean publication to Son '000 in view of MacArthur '116 or Japanese publication 20011113938 ('938) and Fittje or Lutz.

Regarding claims 1,15 the Korean publication to Son is relied upon as before to show a heating arrangement for a brake disc having a conductor located within the disc.

Son however lacks showing the pincer-shaped calipers and an electromagnetic induction means for generating heat in a conductor placed within a brake disc.

The references to MacArthur or Japanese publication '938 both teach heating arrangements for discs in automobile applications. See MacArthur col. 2 in its entirety.

Although a translation of the Japanese publication '938 is not yet available note what appears to be a brake arrangement in the several embodiments of figures 2-9 but particularly figure 4 showing the well known "pincer shaped" calipers. Such calipers are

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notoriously well known in the art as indicated in the cited documents (Granborg) from applicants. Please see the abstract of this reference.

Electromagnetic braking assemblies are notoriously well known in the hybrid vehicle braking art to supplement friction braking. These are commonly known as regenerative brakes. The references to Fittje or Lutz are relied upon to show the principles taught by either JP '938 or MacArthur also can be applied to motor vehicle braking assemblies that use a magnet and coil assembly, placed either in the "rotor" or "stator" (i.e. brake caliper) to supplement friction or mechanical braking and simultaneously generate a current to recharge a vehicle battery.

It would have been obvious to have used a well known pincer-type braking arrangement as a substitution for that of Son at 60 and to have supplemented the device with an electromagnetic braking assembly (i.e coil and magnet assembly), as taught collectively by the references above, to not only produce heating of the brake disc but to supplement the friction braking and to save on energy by sending it back to a battery pack, as in hybrid electric vehicles.

Regarding claim 6, subject to the 112 rejection above, it would have been obvious to have provided the coil/wire element of Son within the disc with an "insulating body", as broadly claimed, to act as a support or seal for the conductive the element without materially affecting the current generated therein. However the insulating body as broadly claimed could be just about any element located between the disc and generating circuit.

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Regarding claims 7,8 as broadly claimed, just about any of the components substituted for those of Son can be considered to be a "part" and comprise both "linear" and "curved" *parts* such that it at least fits the contour of the disc. However, it would also be the case for the choice of particular conductor(s) for the brake disc and to provide uniform heating.

Regarding claims 9,11-13 as broadly claimed and as best understood, these limitations are met by the combined references and as discussed above.

Allowable Subject Matter

9. Claims 2-5,10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art has been cited for showing electromagnetic type regenerative brakes.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Schwartz whose telephone number is 703-308-0576. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Bucci can be reached on 703-308-3668. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cps
5/23/05